

107848

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From: Rao, Manjunath N.  
Sent: Thursday, November 06, 2003 3:00 PM  
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Subject: Sequence search request for 10/024370

From: Manjunath N. Rao  
Art Unit 1652, Room 10A11  
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Phone: 306-5681

Date: 11-5-03

Please search the following as soon as possible for application with serial number **10/024,370**

1. SEQ ID NO:1, and 2 against all commercial nucleic acid databases including issued patents database and pending application database and provide a print of all results.
2. SEQ ID NO: 3 against all commercial protein databases including issued patents database and pending application database and provide a print of all results.

If you have any questions please call me at the above phone number.

Thanks

Manjunath N. Rao, Ph.D.  
Biotechnology Patent Examiner  
Art Unit 1652, Room 10A11  
Mail Box in 10D01  
Crystal Mall 1, USPTO.

Searcher: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Location: \_\_\_\_\_  
Date Picked Up: \_\_\_\_\_  
Date Completed: \_\_\_\_\_  
Searcher Prep/Review: \_\_\_\_\_  
Clerical: \_\_\_\_\_  
Online time: \_\_\_\_\_

TYPE OF SEARCH:  
NA Sequences: \_\_\_\_\_  
AA Sequences: \_\_\_\_\_  
Structures: \_\_\_\_\_  
Bibliographic: \_\_\_\_\_  
Litigation: \_\_\_\_\_  
Full text: \_\_\_\_\_  
Patent Family: \_\_\_\_\_  
Other: \_\_\_\_\_

VENDOR/COST (where applic.)  
STN: \_\_\_\_\_  
DIALOG: \_\_\_\_\_  
Questel/Orbit: \_\_\_\_\_  
DRLink: \_\_\_\_\_  
Lexis/Nexis: \_\_\_\_\_  
Sequence Sys.: \_\_\_\_\_  
WWW/Internet: \_\_\_\_\_  
Other (specify): \_\_\_\_\_

=> d his

(FILE 'HOME' ENTERED AT 14:02:39 ON 06 NOV 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,  
BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,  
CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS,  
DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, ...' ENTERED AT 14:03:33 ON 06 NOV  
2003

SEA ACETYL CO-A CARBOXYLASE OR ACCDA

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1 FILE AGRICOLA  
13 FILE BIOSIS  
6 FILE BIOTECHABS  
6 FILE BIOTECHDS  
4 FILE CABA  
19 FILE CAPLUS  
1 FILE CIN  
1 FILE CONFSCI  
4 FILE CROPU  
3 FILE DISSABS  
3 FILE DGENE  
1 FILE DRUGU  
6 FILE EMBASE  
3 FILE ~~ESBIOBASE~~  
2 FILE FEDRIP  
3 FILE FROSTI  
2 FILE FSTA  
4 FILE GENBANK  
4 FILE IFIPAT  
6 FILE LIFESCI  
2 FILE MEDLINE  
1 FILE PASCAL  
6 FILE SCISEARCH  
7 FILE TOXCENTER  
12 FILE USPATFULL  
3 FILE WPIDS  
3 FILE WPINDEX

L1 QUE ACETYL CO-A CARBOXYLASE OR ACCDA

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FILE 'CAPLUS, BIOSIS, USPATFULL, TOXCENTER, BIOTECHDS, EMBASE, LIFESCI,  
SCISEARCH, CABA' ENTERED AT 14:19:51 ON 06 NOV 2003

L2 13 S L1 AND CORYNEBACTERIUM

L3 9 DUP REM L2 (4 DUPLICATES REMOVED)

=> d 13 ibib ab 1-9

L3 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2003:377055 CAPLUS  
DOCUMENT NUMBER: 138:380500  
TITLE: Protein and nucleic acid sequence of aspartate kinase  
gene lysC and production of chemical compounds by  
fermentation from Coryneform bacteria  
INVENTOR(S): Bathe, Brigitte; Kreutzer, Caroline; Moeckel, Bettina;  
Thierbach, Georg  
PATENT ASSIGNEE(S): Degussa AG, Germany  
SOURCE: PCT Int. Appl., 127 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003040373	A2	20030515	WO 2002-EP8464	20020730
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2001-309878P P 20010806

AB The invention relates to coryneform bacteria which have, in addn. to at least one copy, present at the natural site (locus), of an open reading frame (ORF), gene or allele which codes for the synthesis of a protein or an RNA. In each case a second, optionally third or fourth copy of this open reading frame (ORF), gene or allele at in each case a second, optionally third or fourth site in a form integrated into the chromosome and processes for the prepn. of chem. compds. by fermn. of these bacteria. The nucleotide and protein sequence of *Corynebacterium* aspartate kinase gene lysC allele is presented. The invention provides a process for the prepn. of L-lysine by fermn.

L3 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 2003:133441 CAPLUS  
DOCUMENT NUMBER: 138:182049  
TITLE: Enhanced L-lysine production from  
*Corynebacterium* glutamicum strains bearing two  
copies of lysCFBR gene  
INVENTOR(S): Bathe, Brigitte; Kreutzer, Caroline; Moeckel, Bettina;  
Thierbach, Georg  
PATENT ASSIGNEE(S): Degussa AG, Germany  
SOURCE: PCT Int. Appl., 109 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003014330	A2	20030220	WO 2002-EP8465	20020730

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,  
 TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,  
 CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
 PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
 NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-309877P P 20010806

AB The invention relates to coryneform bacteria, which instead of the singular copy of an open reading frame (ORF), gene or allele naturally present at the particular desired site (locus), have at least two copies of the open reading frame (ORF), gene or allele in question, preferably in tandem arrangement, and optionally at least a third copy of the open reading frame (ORF), gene or allele in question at a further gene site, and processes for the prepn. of chem. compds. by fermn. of these bacteria. Thus, *Corynebacterium glutamicum* strain DSM 139921 lysCFBR::lysCFBR was prepd. as follows: A mutant lysC gene, which encodes a feedback resistant aspartate kinase, was isolated from chromosomal DNA of the mutant *Corynebacterium glutamicum* strain DSM 139921. The isolated lysCFBR gene was then incorporated into plasmid pK18mobSacB2xlysCSma2/1. This plasmid was then employed to integrate the lysCFBR gene into the *Corynebacterium glutamicum* chromosome in a tandem arrangement with its allele. *Corynebacterium glutamicum* strain DSM 139921 lysCFBR::lysCFBR was then shown to produce 21.6 g/L of L-lysine as compared to 18.9 for the DSM 13992 strain.

L3 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:301460 CAPLUS

DOCUMENT NUMBER: 137:89262

TITLE: Lipid synthesis in *Corynebacterium glutamicum*: Genetical and biochemical investigations of acyl-CoA carboxylases

AUTHOR(S): Tilg, Yvonne

CORPORATE SOURCE: Institut fur Biotechnologie, Germany

SOURCE: Berichte des Forschungszentrums Juelich (2002), Juel-3946, i-ix, 1-133  
 CODEN: FJBEE5; ISSN: 0366-0885

DOCUMENT TYPE: Report

LANGUAGE: German

AB The Gram-pos. soil bacterium *C. glutamicum* is used for the industrial prodn. of amino acids as L-glutamate and L-lysine. The cell wall of this bacterium and related *Corynebacteriaceae* is in addn. to the cytoplasmic membrane built up of a second distinct lipid layer, e.g. the mycolic acid layer. It was shown that these two lipid layers are decisive for the transport of solutes and are likely to influence the efflux of the amino acids. Since the lipid synthesis of the bacterium is not entirely known, the present work describes the isolation of acyl-CoA carboxylases which catalyze the initial reaction of the lipid biosynthesis as well as the characterization of the enzyme activity. In addn. to the gene accBC coding for a putative  $\alpha$ -subunit of an acyl-CoA carboxylase the four further genes accDA, dtsR1, dtsR2 and dtsR3 were isolated and sequenced. The deduced amino acid sequences of the genes exhibit high identities to  $\beta$ -subunits of acyl-CoA carboxylases. Enzymic investigations revealed that AccBC and AccDA built up a functionally enzyme complex. The coexpression of accBC and accDA causes a threefold higher carboxylation of acetyl-CoA to malonyl-CoA, the precursor of the fatty acid biosynthesis, with a specific activity of 161 mU/mg protein. The enzyme carboxylates propionyl-CoA as well. The enzyme is also proved to be essential for *C. glutamicum* since it is not possible to inactivate accBC or accDA. The inactivation of dtsR1, dtsR2

or dtsR3 led to evident growth limitations, resp. The growth of each mutant strain is partly restored by supplementation with different fatty acids. This points to a function of the gene products in the lipid biosynthesis. The isolation of the biotinylated AccBC protein by avidin affinity chromatog. resulted in the coisolation of proteins identified as DtsR1, DtsR2 and DtsR3. Thereby it is shown that one .alpha.-subunit can interact with several .beta.-subunits. In conclusion C. glutamicum could have different acyl-CoA carboxylases whose common .alpha.-subunit catalyzes the CO2 fixation and whose .beta.-subunits are responsible for different yet unknown substrate specificities. The L-glutamate and L-lysine export is influenced by overexpression of the acyl-CoA carboxylase genes. After mutual overexpression of accBC and dtsR1 only 30 % L-glutamate has accumulated. The mutual overexpression of accBC and accDA decreased the L-lysine accumulation by 11%. Thus the amino acid efflux seems to be correlated with the lipid compn. of the membrane.

REFERENCE COUNT: 233 THERE ARE 233 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L3 ANSWER 4 OF 9 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 3

ACCESSION NUMBER: 2002:279743 BIOSIS

DOCUMENT NUMBER: PREV200200279743

TITLE: Process for the preparation of L-amino acids by  
fermentation and nucleotide sequences coding for the  
accDA gene.

AUTHOR(S): Tilg, Yvonne [Inventor, Reprint author]; Eikmanns, Bernd  
[Inventor]; Eggeling, Lothar [Inventor]; Sahm, Hermann  
[Inventor]; Mockel, Bettina [Inventor]

CORPORATE SOURCE: Mettmann, Germany  
ASSIGNEE: Degussa-Huls Aktiengesellschaft, Frankfurt am  
Main, Germany

PATENT INFORMATION: US 6361986 March 26, 2002

SOURCE: Official Gazette of the United States Patent and Trademark  
Office Patents, (Mar. 26, 2002) Vol. 1256, No. 4.  
<http://www.uspto.gov/web/menu/patdata.html>. e-file.  
CODEN: OGUPE7. ISSN: 0098-1133.

DOCUMENT TYPE: Patent

LANGUAGE: English

ENTRY DATE: Entered STN: 8 May 2002

Last Updated on STN: 8 May 2002

AB The invention relates to nucleotide sequences coding for the accDA  
gene and to a process for the preparation of L-amino acids, especially  
L-lysine, by fermentation using corynebacteria in which the  
accDA gene is amplified.

L3 ANSWER 5 OF 9 USPATFULL on STN

ACCESSION NUMBER: 2002:273569 USPATFULL

TITLE: Method to monitor a fermentation process

INVENTOR(S): Farwick, Mike, Bielefeld, GERMANY, FEDERAL REPUBLIC OF  
Brehme, Jennifer, Bielefeld, GERMANY, FEDERAL REPUBLIC  
OF  
Hermann, Thomas, Bielefeld, GERMANY, FEDERAL REPUBLIC  
OF  
Bathe, Brigitte, Salzkotten, GERMANY, FEDERAL REPUBLIC  
OF  
Marx, Achim, Bielefeld, GERMANY, FEDERAL REPUBLIC OF  
Mockel, Bettina, Dusseldorf, GERMANY, FEDERAL REPUBLIC  
OF  
Rieping, Mechthild, Bielefeld, GERMANY, FEDERAL  
REPUBLIC OF  
Ermantraut, Eugen, Jena, GERMANY, FEDERAL REPUBLIC OF  
Ellinger, Thomas, Jena, GERMANY, FEDERAL REPUBLIC OF  
Huthmacher, Klaus, Gelnhausen, GERMANY, FEDERAL

REPUBLIC OF  
Pfefferle, Walter, Halle, GERMANY, FEDERAL REPUBLIC OF

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002151700	A1	20021017
APPLICATION INFO.:	US 2001-905992	A1	20010717 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-219030P	20000718 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	PILLSBURY WINTHROP, LLP, P.O. BOX 10500, MCLEAN, VA, 22102	
NUMBER OF CLAIMS:	10	
EXEMPLARY CLAIM:	1	
LINE COUNT:	830	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides arrays of single- or doublestranded desoxyribonucleic acid (DNA) probes immobilized on solid supports and for using those probe arrays to detect specific nucleic acid sequences contained in a target nucleic acid in a sample, especially a method to monitore a fermentation process.

L3 ANSWER 6 OF 9 USPATFULL on STN

ACCESSION NUMBER: 2002:258835 USPATFULL

TITLE: Process for the preparation of L-amino acids by fermentation and nucleotide sequences coding for the **accDA** gene

INVENTOR(S): Tilg, Yvonne, Mettmann, GERMANY, FEDERAL REPUBLIC OF  
Eikmanns, Bernd, Ulm, GERMANY, FEDERAL REPUBLIC OF  
Eggeling, Lothar, Julich, GERMANY, FEDERAL REPUBLIC OF  
Sahm, Hermann, Julich, GERMANY, FEDERAL REPUBLIC OF  
Mockel, Bettina, Bielefeld, GERMANY, FEDERAL REPUBLIC OF  
OF

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002142405	A1	20021003
APPLICATION INFO.:	US 2001-24370	A1	20011221 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 1999-362899, filed on 29 Jul 1999, GRANTED, Pat. No. US 6361986		

	NUMBER	DATE
PRIORITY INFORMATION:	DE 1999-19924365	19990527
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	PILLSBURY WINTHROP, LLP, P.O. BOX 10500, MCLEAN, VA, 22102	
NUMBER OF CLAIMS:	16	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	1 Drawing Page(s)	
LINE COUNT:	702	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to nucleotide sequences coding for the **accDA** gene and to a process for the preparation of L-amino acids, especially L-lysine, by fermentation using **corynebacteria** in which the **accDA** gene is amplified.

L3 ANSWER 7 OF 9 LIFESCI COPYRIGHT 2003 CSA on STN

ACCESSION NUMBER: 2002:60559 LIFESCI

TITLE: Process for the preparation of L-amino acids by

fermentation and nucleotide sequences coding for the **accDA** gene

AUTHOR: Tilg, Y.; Eikmanns, B.; Eggeling, L.; Sahm, H.; Mockel, B.  
CORPORATE SOURCE: Degussa-Huls Aktiengesellschaft  
SOURCE: (20020326) . US Patent: 6361986; US CLASS: 435/194;  
435/183; 435/252.3; 435/252.32; 435/320.1; 536/23.2.  
DOCUMENT TYPE: Patent  
FILE SEGMENT: W2  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB The invention relates to nucleotide sequences coding for the **accDA** gene and to a process for the preparation of L-amino acids, especially L-lysine, by fermentation using **corynebacteria** in which the **accDA** gene is amplified.

L3 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2000:839122 CAPLUS  
DOCUMENT NUMBER: 134:16634  
TITLE: Fermentation of L-amino acids with coryneform bacteria with elevated expression of the **accDA** genes  
INVENTOR(S): Tilg, Yvonne; Eggeling, Lothar; Eikmanns, Bernhard; Sahm, Hermann; Mockel, Bettina  
PATENT ASSIGNEE(S): Degussa-Huls Aktiengesellschaft, Germany; Forschungszentrum Julich GmbH; Kernforschungsanlage Juelich  
SOURCE: Eur. Pat. Appl., 20 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1055725	A2	20001129	EP 2000-109842	20000510
EP 1055725	A3	20001220		
EP 1055725	B1	20031022		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

DE 19924365	A1	20001130	DE 1999-19924365	19990527
US 6361986	B1	20020326	US 1999-362899	19990729
CN 1275620	A	20001206	CN 2000-109310	20000519
JP 2001008693	A2	20010116	JP 2000-153547	20000524
BR 2000002493	A	20010508	BR 2000-2493	20000525
CA 2307327	AA	20001127	CA 2000-2307327	20000526
ZA 2000002658	A	20001129	ZA 2000-2658	20000526
US 2002142405	A1	20021003	US 2001-24370	20011221

PRIORITY APPLN. INFO.: DE 1999-19924365 A 19990527  
US 1999-362899 A3 19990729

AB A method of fermenting amino acids, esp. L-lysine, with coryneform bacteria with increased levels of expression of the **accDA** genes encoding subunits of the acetyl-CoA carboxylase is described. Cloning of the **accDA** gene is described. Expression of the **accDA** gene in **Corynebacterium glutamicum** increased lysine yields from 7.2 g/L to 8.0 g/L.

L3 ANSWER 9 OF 9 USPATFULL on STN

ACCESSION NUMBER: 95:78092 USPATFULL  
TITLE: Method to produce biotin  
INVENTOR(S): Campbell, John W., Fort Collins, CO, United States  
Cheung, Alex, Fort Collins, CO, United States  
Eddy, Christina K., Loveland, CO, United States  
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Ludwigshafen, Germany, Federal Republic of (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5445952		19950829
APPLICATION INFO.:	US 1993-7559		19930122 (8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Wax, Robert A.		
ASSISTANT EXAMINER:	Kim, Hyosuk		
LEGAL REPRESENTATIVE:	Whyte Hirschboeck Dudek		
NUMBER OF CLAIMS:	3		
EXEMPLARY CLAIM:	2		
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 5 Drawing Page(s)		
LINE COUNT:	1342		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a method to enhance a cell's ability to produce biotin precursors and/or biotin by deregulating at least one enzyme of the fatty acid biosynthetic pathway in the cell, preferably an enzyme that carries out an early step in the pathway. Preferably, the biotin biosynthetic pathway is also deregulated. The invention includes biotin-producing cells in which at least one enzyme of the fatty acid biosynthetic pathway is deregulated, preferably by transforming the cells with nucleic acid sequences encoding at least one of those enzymes; methods to produce such cells; and use of such cells to produce biotin.